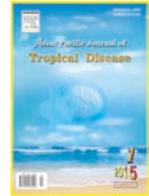


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Some discussions on imported dengue virus and use of adjunctive recombinant activated factor VIIa in dengue

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ABSTRACT

Dengue virus infection is common in tropical world and becomes the big public health threat in tropical medicine. The changing of its epidemiology is very interesting. The good transportation is an important consideration. The concern on the imported dengue virus is interesting. On the other hand, the new alternative method corresponding to the infection is interesting. Here, the authors make some discussions on imported dengue virus and use of adjunctive recombinant activated factor VIIa in dengue.

1. Introduction

Dengue virus infection is common in tropical world and becomes the big public health threat in tropical medicine. The changing of its epidemiology is very interesting. The good transportation is an important consideration. The concern on the imported dengue virus is interesting. On the other hand, the new alternative method corresponding to the infection is interesting. Here, the authors make some discussions on imported dengue virus and use of adjunctive recombinant activated factor VIIa in dengue.

2. Imported dengue virus

Imported disease is usually an important consideration in infectious medicine[1]. Imported dengue is an important condition. CDC has documented for its importance for years[2]. As noted by Vilibi -Cavlek *et al.* in "LijecVjesn" journal, "the disease is endemic in tropical and subtropical areas between latitudes 35 degrees N and 35 degrees S. Infections may be asymptomatic or may produce a wide spectrum of diseases: non-specific febrile illness, dengue fever, dengue haemorrhagic fever or dengue shock syndrome[3]." Emerging of the disease in the new setting becomes a challenge and the diagnosis can be delayed. However, it is no doubt that the imported dengue is existed and should not be overlooked.

The recent report on "imported dengue virus from Thailand" is very interesting[4]. Polwiang found that "infective person-days ranged from 87 to 112 per 100 000 travelers each year[4]." In fact, imported dengue case from endemic area is the present

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concern in travel medicine. It is recommended that dengue should be a differential diagnosis in any returning traveler from the tropical region who has febrile illness[5]. Focusing on the present model by Polwiang, there are some considerations[5]. First, the probability of travelers being infected has to be based on their destination. The dengue situation in different regions of Thailand is different. Second, although Polwiang considered number of arrivals in the model, the transit and stopover along arrival route are not included[5]. If the traveler has a trans-Indochina trip, the risk of infection and occurrence of possible infection has to be modified. Finally, the validation on the reported incidence of dengue has to be discussed. The diagnosis of dengue in resource limited country usually based on symptoms and hematological findings of thrombocytopenia without immunological or virological confirmation[4,6].

As noted by Buonsenso *et al.*, “due to global urbanization and increased air travel, it is nowadays important that physicians who practice outside of traditionally dengue endemic areas are adept at the recognition of potentially fatal reemerging infectious diseases such as dengue[7].” To manage the imported dengue, the important step is usually the early consideration and diagnosis by practitioner who primarily see the patients.

3. Use of adjunctive recombinant activated factor VIIa in dengue

The new thing in dengue is not only the change of its epidemiology. The new updated modality to manage the disease to correspond the emerging and reemerging of dengue is also important. Basically, to manage dengue, the supportive and symptomatic treatment is sufficient[4]. However, the medical scientist also tries to find out more modern alternative management. Use of adjunctive recombinant activated factor VIIa in dengue is interesting. This is firstly mentioned by Chuansumrit *et al.*[8]. Chuansumrit *et al.* reported that “rFVIIa appears to be a useful adjunctive treatment to blood component transfusion for controlling active bleeding in children with DHF especially when platelet concentrate is not readily available[8].” In fact, the new alternative treatment by rFVIIa might be useful. However, in general case, the platelet transfusion is also not presently recommended as standard treatment for dengue. In addition, the high cost of rFVIIa is the big issue for discussion.

Nevertheless, this practice is still not worldwide recommended. However, some researchers from the endemic area tried to find evidence to support the cost effectiveness of this technique. The recent report on “adjunctive recombinant activated factor VIIa (rFVIIa) in dengue” is very interesting[3]. Naing *et al.* concluded that “despite high cost, there is a role for rFVIIa in the treatment of life-threatening bleeding in patients with DHF/DSS[3].” In fact, it is no doubt that there is a role, however, the point is whether the use of this adjunctive treatment is cost effective or not. Based on the present report, using adjunctive treatment can result in

improved quality of life. However, it is questionable whether the derived quality of life is more than the standard clinical therapy by classical fluid replacement therapy. “High cost” of rFVIIa is an important consideration. Who has to pay for this alternative therapy has to be discussed. If it has to be paid by the patient’s family, it seems to be a problem. In addition, “ thromboembolic adverse events and side effects” are the important unwanted adverse effects of using thromboembolic adverse events and side effects[4]. Kiessling *et al.* concluded that “there remains a suspicion that a higher rate of mesenteric infarctions may be provoked by the administration of FVIIa[4]”. The possible problems due to using rFVIIa has to be evaluated in medical economic analysis.

Although cost and adverse events are important in any treatment, these are really always understood. To have more information about the cost for this treatment in the practice in each setting and also the adverse events that have taken place with dengue fever treatment is the issue for further study.

4. Conclusion

Dengue is an old tropical disease but there are many new interesting concerns on it. Its new epidemiology due to the imported dengue must be highly considered at present. On the other hand, practitioner has to update the knowledge on new coming alternative treatment such as rFVIIa.

Conflict of interest statement

We declare that we have no conflict of interest.

References

- [1] Sutton RN. Letter: Imported diseases. *Br Med J* 1975; **1**(5949): 94.
- [2] Centers for Disease Control (CDC). Imported dengue--United States, 1990. *MMWR Morb Mortal Wkly Rep* 1991; **40**(30): 519-20.
- [3] Vilibić-Cavlek T, Ljubin-Sternak S, Babić-Erceg A, Sviben M, Mlinarić-Galinović G. [Virology diagnosis of re-emergent infections: dengue virus]. *LijecVjesn* 2012; **134**(5-6): 164-7. Croatian.
- [4] Wiwanitkit V. Dengue fever: diagnosis and treatment. *Expert Rev Anti Infect Ther* 2010; **8**(7): 841-5.
- [5] Polwiang S. The estimation of imported dengue virus from Thailand. *J Travel Med* 2015; **22**: 194-9.
- [6] Wiwanitkit V. Febrile illness in a traveler. *J Emerg Med* 2014; **46**(4): e133.
- [7] Buonsenso D, Barone G, Onesimo R, Calzedda R, Chiaretti A, Valentini P. The re-emergence of dengue virus in non-endemic countries: a case series. *BMC Res Notes* 2014; **7**: 596.
- [8] Chuansumrit A, Wangruangsattid S, Lektrakul Y, Chua MN, Zeta Capeding MR, Bech OM, et al. Control of bleeding in children with Dengue hemorrhagic fever using recombinant activated factor VII: a randomized, double-blind, placebo-controlled study. *Blood Coagul Fibrinolysis* 2005; **16**(8): 549-55.